

# THE END OF EU MILK QUOTAS - IMPLICATIONS IN WEST AFRICA

LITERATURE REVIEW AND FUTURE PERSPECTIVES



This study is part of the joint project Milky Way to Development coordinated by CARE Denmark and financed by Danida. Milky Way to Development aims to finding win-win solutions for the dairy sector in Europe and West Africa by creating a dialogue between dairy producer organisations, West African dairy processors, European industrial dairies and regional political institutions in West Africa. The Alliance: CIRAD (Centre de coopération internationale en recherche agronomique pour le développement); Billital Maroobe Network; Arla Foods; The Danish Agriculture and Food Council; Copenhagen Business School.

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## Abstract

The abolition of milk production quotas in the European Union (EU) in 2015 allows for an increase in dairy production, especially in the EU's biggest exporter countries. This review aims to project the possible impacts of this policy change in West Africa. Several factors, including a predicted increase of exported European whole milk powder (40 % increase in 2015-2025), the investment of several European dairies in West African markets, the strong demographic growth projected in the region and the stagnating domestic production, culminate in the conclusion that the abolition of EU quotas is likely to accelerate milk powder imports in West Africa. This could diminish demand for local milk and, more importantly, discourage efforts to reinforce the local dairy sector, possibly resulting in long-lasting negative effects on local production and processing conditions. However, accelerating imports would likely not transform the sector profoundly. Rather, it would deepen the existing structural dependency of West Africa on imported European milk powder.

The negative consequences mentioned do not occur automatically but depend for instance on the substitutability of local milk by imported milk powder. Even the possible positive effects imports can bring, such as spurring local processing industry, should not be taken for granted, as they are conditional to low milk powder prices. Increasing the share of local milk processed in regional dairies is key for reinforcing the local sector but, due to numerous constraints, this requires considerable investment. Whilst European dairy companies already active in the region could provide the local sector with the needed capital, the regions' governments must formulate appropriate agricultural and trade policies to ensure these investments prove successful. The West African dairy sector can neither rely solely on local milk today nor in the foreseeable future, which is why "inclusive" industrial strategies are promoted: instead of concentrating exclusively on milk powder, as most industrial dairies do today, using both milk powder and raw milk could provide wider economic gains to both dairies and producers.

This study calls for more research on the substitutability of the two product types and on the trade of fat-filled milk powder, an increasingly interesting product on West African markets, in order to better predict the future of the local dairy sector.

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## Abbreviations

<i>CET</i>	<i>Common External Tariff</i>
<i>ECOWAS</i>	<i>Economic Community of West African States</i>
<i>EU</i>	<i>European Union</i>
<i>FAO</i>	<i>Food and Agriculture Organization of the United Nations</i>
<i>FCFA</i>	<i>West African CFA franc</i>
<i>FFMP</i>	<i>fat-filled milk powder</i>
<i>OECD</i>	<i>Organisation for Economic Co-operation and Development</i>
<i>SMP</i>	<i>skimmed milk powder</i>
<i>WMP</i>	<i>whole milk powder</i>



## **Introduction**

In April 2015, the European Union (EU) abandoned its milk production quota system that had regulated European markets since the 1980s. Some producer countries have, thereafter, announced significant future increases in milk powder exports with West Africa being an important destination market. This has preoccupied some advocates of local milk production in the region where dairy production – based largely on extensive pastoral and agro-pastoral systems – might be threatened by growing imported milk powder volumes. The present study outlines the likely effects of the abolition of the EU production quotas on dairy trade between the EU and West Africa (Part 1) and reviews the possible impacts on the local dairy sector, describing what positive and negative effects the quota abolition might have and under which conditions these impacts would take place (Part 2). Moreover, the paper discusses the possibilities to secure a viable domestic fresh milk sector in West Africa in face of the EU quota abolition (Part 3).

This study is based primarily on data from Burkina Faso, Mali, Mauritania, Niger, Nigeria and Senegal, which for a large part dominate the existing literature. These countries share important characteristics in livestock production systems in contrast to most coastal states where the livestock sector is of lesser economic importance and the natural conditions are different. However, with the EU as the primary source of dairy imports, even the latter will not be immune to the effects of the quota abolition, especially in Benin, Ivory Coast and Ghana where European dairy companies are already present in their markets

## **Dairy sector in West Africa**

Livestock is one of the primary sources of livelihood in the Sahelian parts of West Africa. It accounts for 10-15 % of the total GDP (Gross Domestic Product) in Burkina Faso, Mali, Mauritania and Niger and less than 5 % in other states. (Duteurtre & Corniaux, 2013; ITC, 2016) Milk production is, however, rarely the principal reason for keeping livestock and more often than not, domestic livestock races are more suited for producing meat rather than milk. Besides meat and milk, livestock production provides revenue and resources in a plethora of forms, such as manure and animals skins, a means of storing household capital in animals and social prestige. It is therefore misleading to use a term “milk production” or “milk producers”, as milk is only one of the products livestock provides. (Duteurtre & Faye, 2009)

In general, three different livestock production systems can be identified in the region: extensive pastoral and agro-pastoral, semi-intensive agro-pastoral and intensive production. The OECD estimates pastoral systems to account for 70 % of milk and 60 % of cattle meat production

in West Africa and agro-pastoral some 15 % and 35 % (OECD, 2008). Intensive farms are said to provide less than 2 % of the regional milk production with the remaining share originating from different forms of mixed systems. During the last twenty years, semi-intensive and intensive production, in which imported breeds and other modern inputs can be used, have slightly increased. However, extensive rural production still predominates and production nearby cities is scarce. Production conditions are hard throughout the region, especially for extensive systems, which suffer most from scarcity of water and grazing pastures, particularly during the long dry period. Milk supply is heavily concentrated on the 3-4 month long rainy season and unproductive livestock breeds keep production levels low: whilst European cattle breeds may produce 7 000-10 000 litres per year, local species in West Africa attain some 200-500 litres per year. (Duteurtre & Corniaux, 2013)

It is worth noting that pastoralists often live in precarious conditions and Clanet (2009) estimates that the majority of Sahelian pastoralists live on less than one dollar per day. Still, he argues their relative poverty can be questioned, as possessing livestock is considered a sign of wealth and one allowing for flexibility when resources are scarce<sup>1</sup>. Therefore, measurable poverty rates do not capture the complexity of most pastoralists' livelihood situation but do serve as a reminder of the prevalence of poverty among these groups.

In both rural and urban environments, informal economy prevails and only 10 % of total milk produced in West Africa is estimated to be collected by dairies ranging from small independent ones to larger industrial entities (Duteurtre, 2007). Small-scale dairies<sup>2</sup> started to emerge in the 1990s in four countries; Burkina Faso, Mali, Niger and Senegal. Their number has increased rapidly especially since 2005, from nearly zero in the 1990s to over 150 in 2014 (Broutin et al., 2014). They rely principally on local fresh milk but milk powder can be used to supplement during the dry season (Corniaux, 2015; Duteurtre & Corniaux, 2013). Alongside small artisan dairies some sixty industrial dairies have been identified in the region (Corniaux, 2015). It was the abundance of imported milk powder that enabled the rise of industrial dairies from the 1970s-90s and, with few exceptions, (Fada N'Gourma in Burkina Faso, Laiterie du Berger in Senegal, Tiviski in Mauritania) the majority of their production is still based on powder. However, altogether eight industrial dairies have started collecting some local milk, showing interest in changing their sourcing strategies (Table 1).

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<sup>1</sup> During droughts or situations where sudden expenses arise, for instance for medicine or for a wedding, livestock can be sold and easily turned from capital into cash – an unthinkable asset for most rural households (Clanet, 2009).

<sup>2</sup> Small dairy (French: *minilaiterie*) is considered an entity processing between 50 to 3 000 litres, most often some hundreds, of local fresh milk daily, while industrial dairies usually have a processing capacity of more than 10 000 litres per day (Corniaux & Duteurtre, 2014).

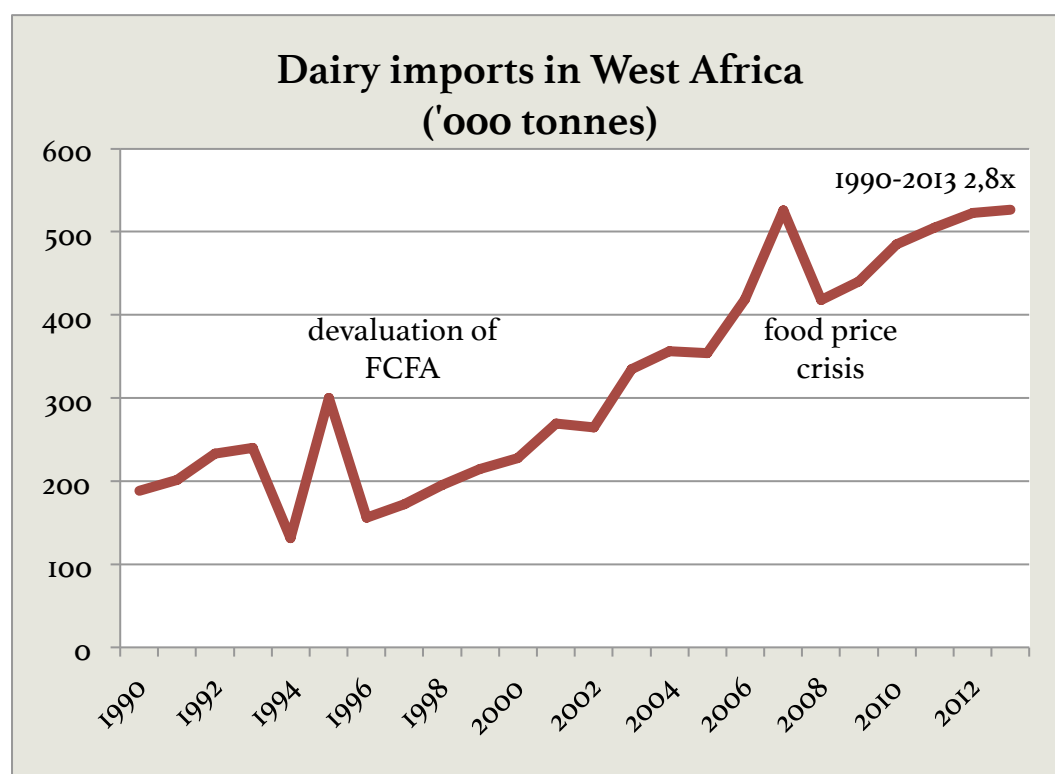
<b>Dairy processing unit</b>	<b>Raw milk collection litres/day</b>	<b>Production litres of milk equivalent/day</b>	<b>Raw milk collection/production</b>	<b>Production capacity litres of milk equiv./day</b>
<b>Eurolait</b> (Mali)	500 - 2 000	20 000	3 - 10 %	20 000
<b>Fada N’Gourma</b> (Burkina Faso)	500 - 800	500 - 800	70 - 100 %	3 000
<b>Kirène</b> (Senegal)	1 000 - 3 000	10 000	10 - 30 %	10 000
<b>Laiterie du Berger</b> (Senegal)	1 000 - 4 000	7 000 - 8 000	13 - 57 %	15 000
<b>Mali-Lait</b> (Mali)	2 000 - 4 000	30 000 - 35 000	6 - 13 %	60 000
<b>NigerLait</b> (Niger)	3 000 - 4 000	35 000	9 - 11 %	55 000
<b>Solani</b> (Niger)	500 - 4 000	25 000	4 - 16 %	40 000
<b>Tiviski</b> (Mauritania)	10 000 - 20 000	20 000	50 - 100 %	30 000

**Table 1** West African industrial dairies collecting local milk

**Source:** Adapted from Corniaux (2015)

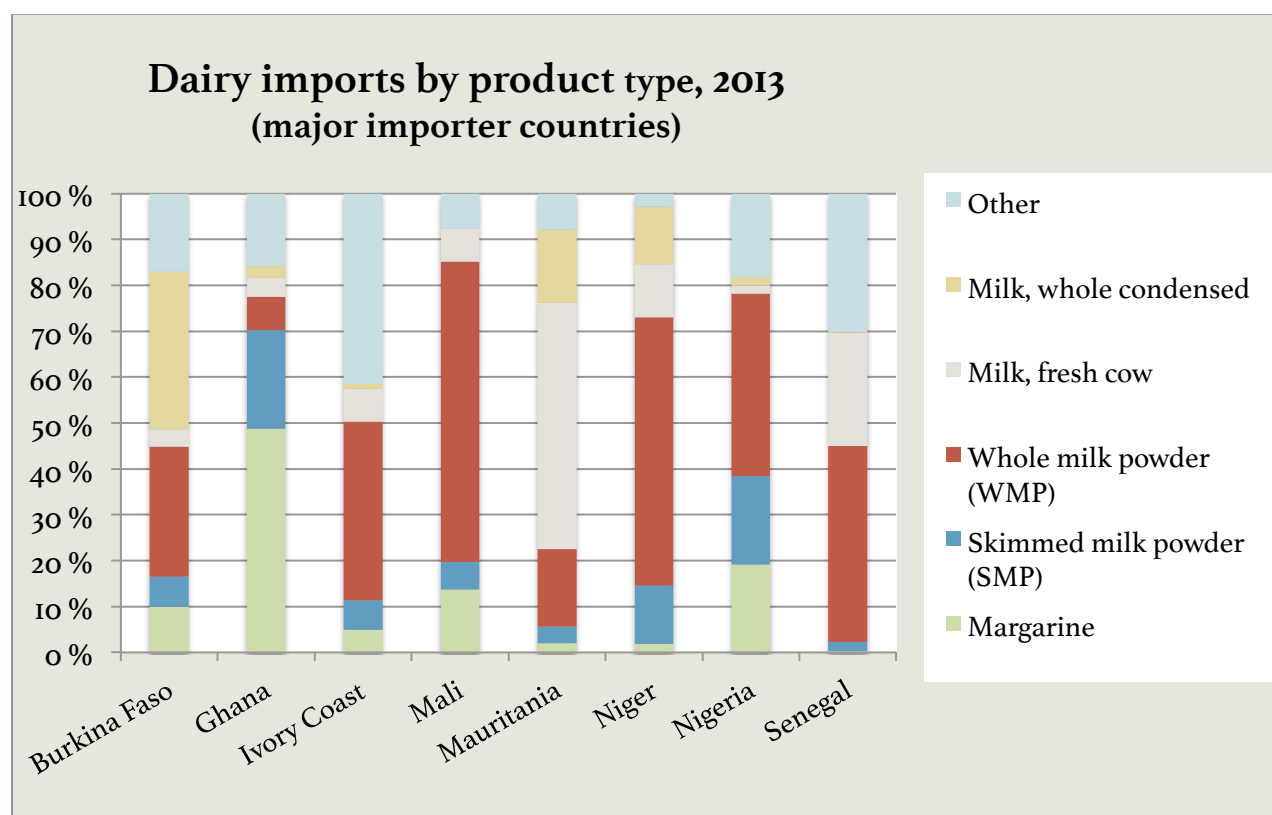
The recent evolutions have hardly affected the amount of milk powder imported, as, within the last 15 years, dairy imports have nearly tripled in West Africa (Figure 1). The main article traded is milk powder (Figure 2) imported in bulk and locally reconstituted into different dairy products or simply repacked in smaller quantities and sold in powder form. National-level statistics on milk production volumes are largely estimative with differences in the outcome depending on the calculation method. Generally, it can be assumed some 4 million tonnes of milk is produced annually in the region (Arla Foods et al., 2016). Due to weak collection networks, this milk often remains in rural areas and the urban demand for dairy products is largely satisfied by imports, which cover some 45-96 % of demand in different cities in West Africa (Corniaux et al., 2012b).





**Figure 1:** Dairy imports in West Africa, 1990-2013

**Source:** FAOSTAT (2016)



**Figure 2:** Dairy imports by product type in West Africa, 2013

**Source:** FAOSTAT (2016)

Over the last decades, three policy alignments can be noted in the region: one ensuring the availability of affordable milk powder to processors and consumers by fixing low import tariffs; the second, aimed at increasing local production through artificial insemination programs, which, however, are only accessible to modern intensive farms; the third setting up small projects to facilitate local milk collection (Duteurtre & Corniaux, 2013).

The future of low import protection seems somewhat guaranteed, as the Economic Partnership Agreement (EPA) is slowly advancing between the EU and ECOWAS (Economic Community of West African States)<sup>3</sup>. The EPA would mean zero-tariffs for bulk milk powder imports instead of the current import tariff of 5 % (EU, 2015). As of October 2016, all other ECOWAS countries have approved the agreement except Nigeria and The Gambia (Hulse, 2016). Their resistance hinders sealing a region-wide EU-ECOWAS agreement but does not prevent bilateral interim agreements from being made, as Ghana and Ivory Coast have already done. Even though the EPAs would be pulled back, the ECOWAS states still have their Common External Tariff (CET), launched in February 2016. The new CET established a 5 % import tariff for bulk milk powder, 10 % for powder in consumer packages (less than 25 kg), 20 % for most liquid milk, cream, butter and cheeses, and 35 % for yoghurts, largely following the lines of previous regional tariff rates. (Ghana Revenue Authority, 2015) Bearing in mind that the vast majority of imports are in powder form, these tariffs do little to protect the local dairy sector.

The three key elements of the West African dairy sector are the dominance of milk powder imports both at the consumer and industry level, extensive pastoralism and agro-pastoralism in production systems and low import barriers in trade policies. Although the prevalence of informal markets remains unshaken, the progress in both small and industrial scale processing has allowed for increasing commercialization of local milk and does provide opportunities for further development.

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<sup>3</sup> ECOWAS comprises of Benin, Burkina Faso, Cape Verde, The Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

## **Part 1 - Milk quota abolition and impacts on dairy trade**

The present chapter will outline how the dairy trade between the EU and West Africa has evolved and how the milk quota abolition would affect the region's dairy markets. The abolition occurs at a time where dairy markets are increasingly global, with the volume of dairy products traded internationally in 2015 being almost twice as much as in 2000 (IDELE & CNIEL, 2016b). In order to evaluate what changes the quota abolition might generate in the EU-West Africa trade, it is therefore necessary to look at the conditions of the global market, namely changes in global demand and trade patterns.

### **Global trends in dairy consumption**

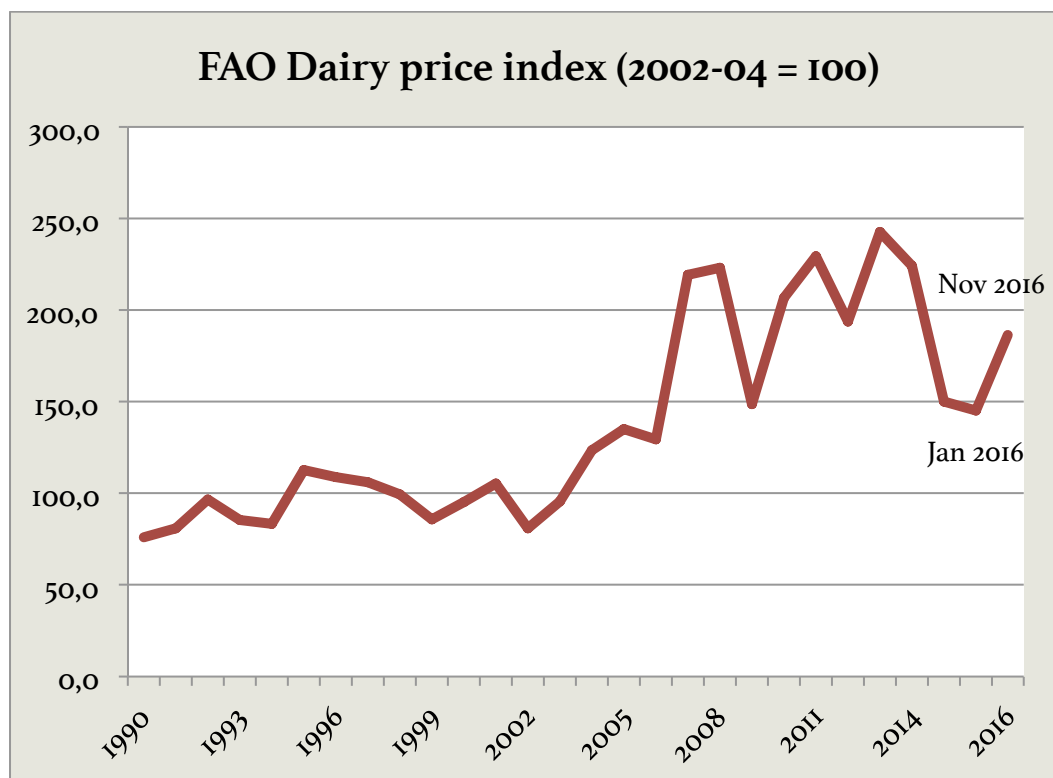
Global consumption of dairy products has been increasing gradually in conjunction with socio-economic development in the global South. As of 2016, Europe and the United States remain on top with an annual consumption of more than 250 kg of milk equivalent per capita but Egypt, Iran, Indonesia and Saudi-Arabia have been bridging the gap between emerging countries and the Western regions. Globally, the FAO projects an annual increase of 2.9 % in dairy consumption for the next ten years. Whilst regional differences must be taken into account, (consumption in Southern Europe, for example, is in decline) current global production will not keep up with this increase with growth remaining at 1.8 % annually. (IDELE & CNIEL, 2016b; OECD/FAO, 2016)

In West Africa, the annual dairy consumption varies between 5 and 65 litres per capita, with Mali and Niger having the strongest demand for milk and Benin, Ivory Coast and Togo significantly weaker (Duteurtre & Corniaux, 2013). Despite internationally low consumption levels, the region is becoming increasingly important as a dairy market. Zhou and Staatz (2016) project an increase in the dairy consumption index from 1.0 in 2010 to 5.5-8.8 in 2040 in ECOWAS countries<sup>4</sup>, which, combined with an annual population growth of 1.6-3.5 % over the same period would only serve to accelerate the rising demand for the near future. More importantly, the annual level of urbanization is some 3.5-4 % in the next decades, resulting in over 30 million new urban consumers in the countries of high dairy consumption (Mali, Mauritania, Niger, Senegal), and over 160 million if Nigeria is included (UN, 2012).

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<sup>4</sup> Excluding Nigeria

A further compounding factor for the West African dairy market is the stagnation of domestic production; while the population doubled between 1990 and 2009<sup>5</sup>, the number of livestock has multiplied by only 1.55 over the same period. More importantly, overall productivity has not improved and any other signs of development are little documented. (Ickowicz et al., 2012) **Therefore, demand for dairy products will be increasingly concentrated in urban areas, whereas production will remain scattered around rural regions, unable to respond to the growing demand.**



**Figure 3:** FAO Dairy price index 1990-2015 (Jan 2016, Nov 2016)

**Source:** FAO (2016)

### **Global dairy trade**

Around 2015, after some eight years of uncertainty through price fluctuation, the world prices for dairy products have settled to the level before the food price crisis in 2007-2008. The last shock was an aggressive downturn following record-high prices in 2014, making the FAO dairy price index (Figure 3) shoot from over 270 to below 140 in 2014-2015 (2002-2004 = 100; FAO, 2016). This was a consequence of several factors; slowing demand in China, the Russian embargo set up by the EU in August 2014 and, simultaneously, an increase in global production. It is in this

<sup>5</sup> in ECOWAS excluding Nigeria

context that the European Union lifted their production quotas in April 2015, pressing world prices even lower (IDELE & CNIEL, 2016a). In September 2016, the markets showed some signs of recovery as the FAO dairy price index rose delicately. Further increase is expected in 2017 (FAO, 2016; Rabobank, 2016b).

While many EU countries concentrate on satisfying their domestic consumption, France, Germany, Belgium, Denmark, Ireland, the Netherlands and Poland all hold a strong presence at international markets. Although France and Germany, alongside the Netherlands, are the largest milk powder exporters in terms of volume, the last five are the leading countries when measuring the share of total production of different products exported. Globally, the EU is the largest exporter of skimmed milk powder, cheese, whey powder and condensed milk exports and comes second only to New Zealand in butter and whole milk powder, underlining the central role the EU holds at global markets. The most important export products in the EU are cheese (18 % of export volumes), skimmed milk powder (13 %) and whey powder (13 %) and since 2012 also fresh milk (25 %), which may, however, remain a short-lasting trend<sup>6</sup>. (Milk Market Observatory, 2016a, 2016b)

### **EU quota abolition and future projections**

The EU milk quotas were production restrictions allocated to each member state, above which they could not increase domestic production. The rationale behind setting up the quota system was to curb overproduction that had led to the famous “milk lakes and butter mountains” at the common markets. In face of increasing global demand for dairy products and the pressure from those member states willing to produce more, the decision was made to abandon the quotas that had regulated the EU markets for 31 years. This meant that from 1<sup>st</sup> of April 2015 onwards, the member states with the most advantageous conditions could accelerate their production. (European Commission, 2016) However, many others will maintain their pre-abolition production levels due to scarce opportunities for expansion (IDELE & CNIEL, 2016a).

Following the quota abolition, both dairy production in, and exports from, the EU<sup>7</sup> are estimated to increase in the period 2015-2025 with important variations between countries and products. While the overall production is estimated to grow 0.8 % annually, Ireland and the Netherlands project growth rates of 18.5 % and 11.5 %, respectively, followed by Germany (3.7 %)

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<sup>6</sup> Fresh milk exports increased rapidly within the last years, whereas it has been of secondary importance for decades. This is boosted by the Russian import ban, as Belarus has started to source fresh milk to process products for the Russian market. (European Commission, 2015b)

<sup>7</sup> The EU referring to the 28 member states

and the United Kingdom (2.9 %) (OECD/FAO, 2016). Consequently, billions of litres of milk will be made available outside the EU, away from the EU's already saturated market. This goes against the logics of supply and demand as in these member states falling global prices have not induced a slowdown in milk production but the very contrary.

This will provoke an export boost that is particularly striking in the case of milk powders. Being easy to store and transport, milk powder is a low-cost and low-risk export product, which can lend itself to a host of end uses from large scale industrial processing to a consumer-ready product repacked in small quantities. Furthermore, skimmed milk powder, in particular, is described as a policy tool to regulate milk prices within the EU through accumulating and releasing stocks according to market conditions (Pinaud, 2014). The European export of milk powders has been projected to skyrocket in the following years, estimated at being around 35 % higher in 2025 than in 2015 (European Commission, 2015a; Eurostat, 2016; OECD Database, 2016). **Whilst in 2013 exports were estimated to rise from 781 000 to 953 000 tonnes by 2023, that level was attained and even surpassed in 2015, exports being over one million tonnes (Eurostat, 2016; OECD Database, 2016).** The exports of the other key products – cheese, butter and whey powder – are expected to increase by 47 %, 40 % and 23 % in 2015-2025, respectively, but due to their marginal role at the West African markets, they are not considered in this study (European Commission, 2015a).

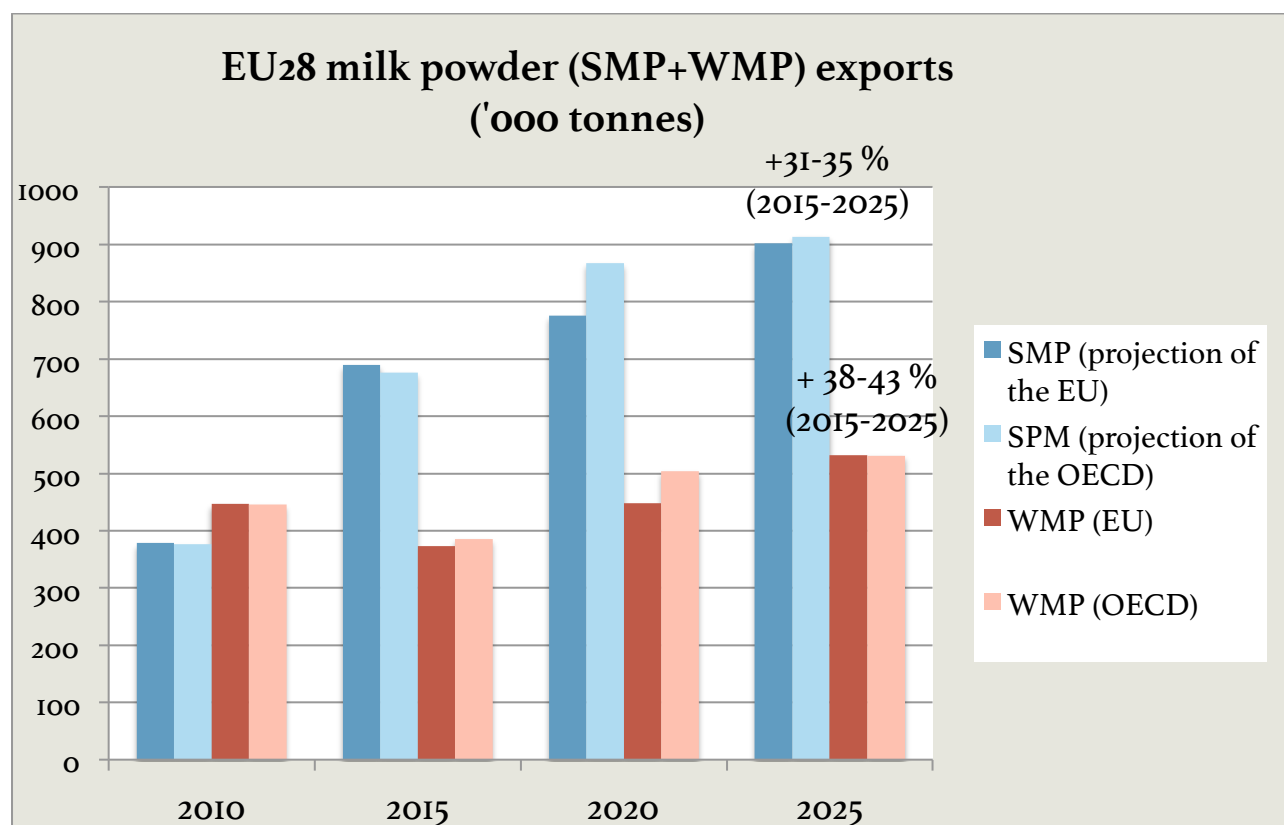
Although skimmed milk powder (SMP) is the leading powder type for European exporters, whole milk powder (WMP) is of principal interest in the case of West Africa (Figure 2). In 2011-2013, WMP represented between 68 % and 98 % of the powder imports in Burkina Faso, Mali, Niger, Nigeria and Senegal (Faostat, 2016). Both the EU and the OECD envisage an increase of around 40 % in WMP exports in 2015-2025 (Figure 4) (European Commission, 2015a; OECD Database, 2016). However, SMP is the basis for fat-filled milk powder (FFMP), processed by enriching skimmed milk powder with vegetable fats, creating a product of the same fat contents as WMP but at a lower price. FFMP is a particularly suitable export product for the West African markets where WMP is preferred but where consumers have weak purchasing power. In this regard, it is worth noting that the SMP production is accelerating and new stocks of SMP are being built within the EU (IDELE & CNIEL, 2016a)<sup>8</sup>. In 2015-2025, SMP exports are expected to increase by around 30 % (European Commission, 2015a; OECD Database, 2016). Projections for FFMP, however, are hard to quantify, as the product appears in trade statistics in an aggregate category

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<sup>8</sup> Alarming SMP surplus rates were already recorded in 2013, making the world prices plunge below the EU intervention level. This triggered an intervention purchase of over 32 000 tons of SMP to be stored and sold later on – a showcase of the EU's strategic stocking and releasing of milk powders according to market conditions (EDA, 2016).

of “processed foods”, rarely detailed enough to see the actual share of FFMP. According to GTIS Global Trade Atlas (Sonneveld, 2016), West African countries imported over 250 000 tonnes of FFMP in 2013, for example Senegal importing 36 000 tonnes of FFMP compared to some 16 000 tonnes of SMP and WMP together imported the same year (Figure 7). These data must be interpreted with caution, as they often base on unofficial statistics from the importer countries. However, **the FAO estimates the trade in FFMP is becoming increasingly important, especially between the EU and Africa** (OECD/FAO, 2016).

Overall, the EU’s forecasts have underestimated the export growth of both WMP and SMP during recent years. The 2015 projections for 2023 are 50 % higher than those made only two years earlier (European Commission, 2013, 2015a). **European producers are therefore showing great capacity to respond rapidly to international demand and, with favourable market conditions, exports may reach unprecedented levels in the near future.**



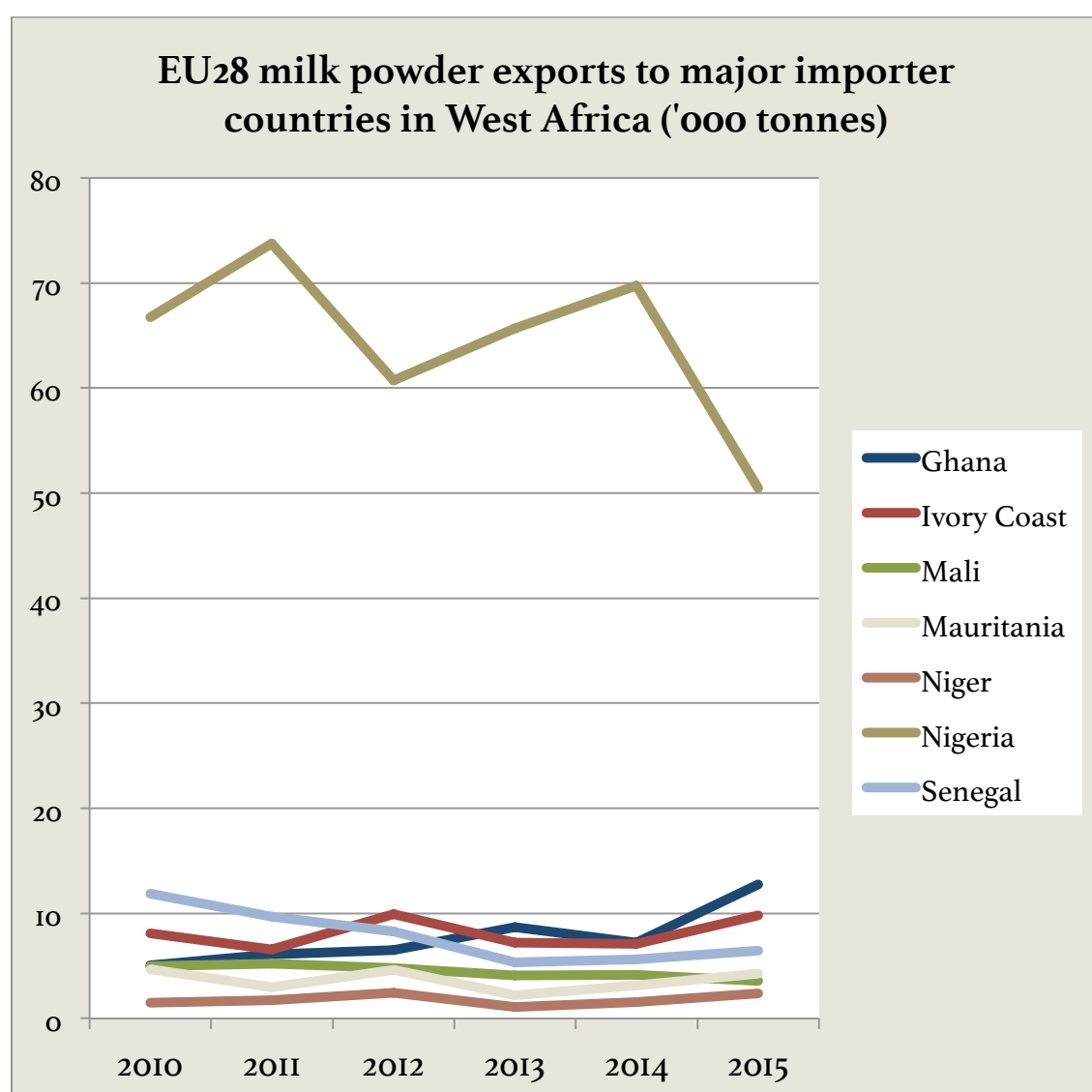
**Figure 4:** EU28 milk powder exports 2010-2025

**Source:** European Commission, 2015a, OECD Database, 2016-12-16



## **Future milk powder exports to West Africa**

West Africa will very likely be affected by future export growth in the EU. As the milk quotas have been absent for only one and a half years, the impact on export levels cannot yet be observed. In 2015, powder exports to West Africa decreased due to a fall in demand in Nigeria (linked to the fall of oil prices and naira, the local currency), who absorbed 50 % to 65 % of exports to the region in 2013-2015. The majority of other countries saw timidly increasing volumes of European milk powder enter their markets (Figure 5). One explanation for the fall in Nigeria and the weak growth elsewhere might be the absence of FFMP in the statistics, and the data should therefore be analysed with great caution.



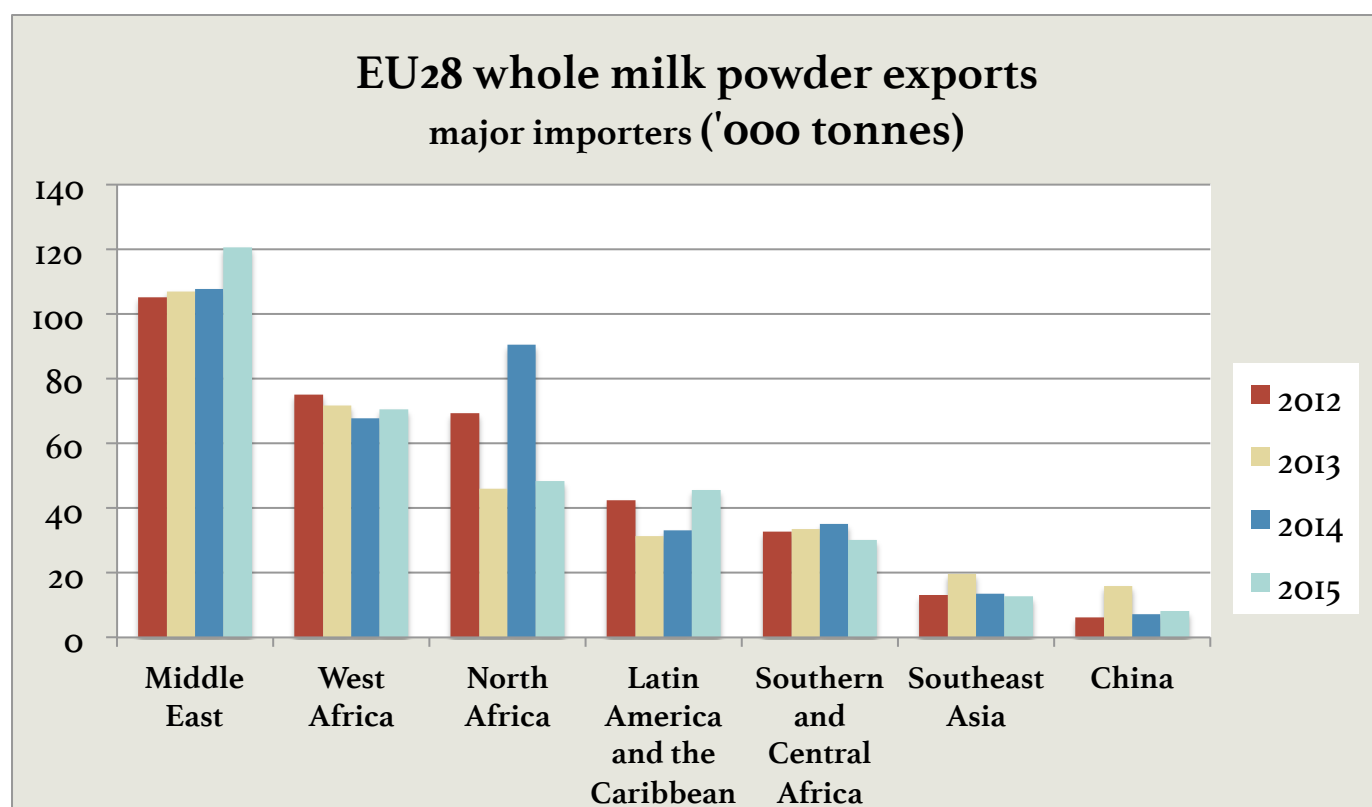
**Figure 5:** EU28 milk powder exports to West Africa, 2010-2015

**Source:** Eurostat (2016)

Nevertheless, we have all the reason to believe powder exports to West Africa will rise. Firstly, West Africa and the EU are extremely important trade partners to one another, illustrated in Figures 6 and 7. West Africa absorbed some 18 % of the European WMP exports in 2012-2015, being the second largest market for the EU after Middle East with a 20-30 % share (Eurostat, 2016). The EU, then again, is by far the main exporter of milk powders in West Africa, providing between one to two thirds of the region's total powder imports within the last years, depending on the country (Figure 7). Figure 7 also shows that New Zealand and Argentina are important exporters to West Africa and recently future growth has been projected for WMP exports from both countries (European Commission, 2015a; OECD Database, 2016). New Zealand, however, is faced with limits in its natural resources, making major expansion of production seemingly unlikely in the future. Argentina shows more potential for growth, but its export levels remain marginal compared to those of the EU (Figure 8). (IDELE & CNIEL, 2016b)

Secondly, the demographic growth and increasing dairy consumption in West Africa, described above, along with the fact that domestic production clearly cannot respond to the region's demand, provides EU exporters with extremely attractive markets to penetrate. Thirdly, several European dairies already have a strong presence in West African markets and have shown a clear interest for expansion (see next chapter).

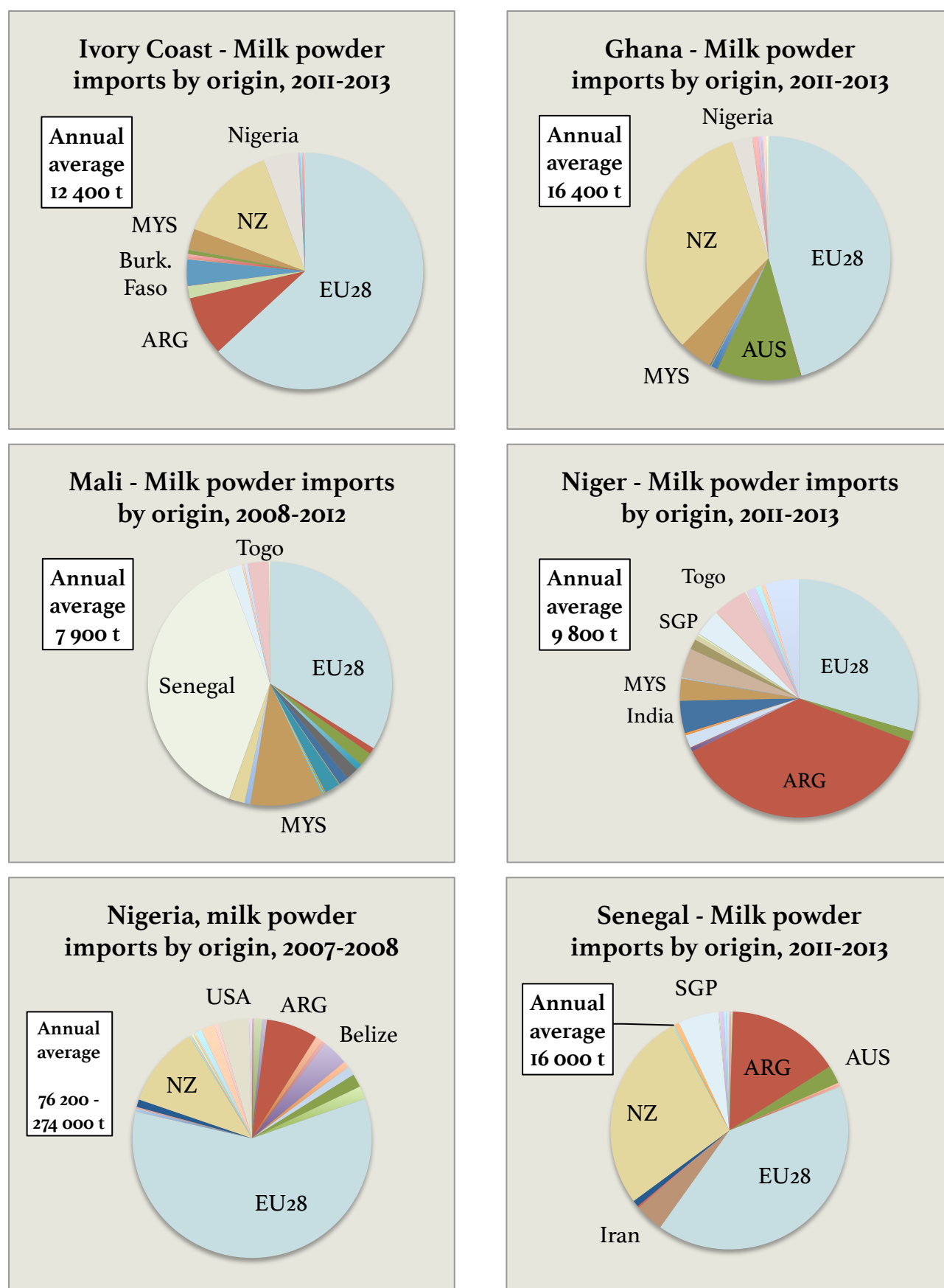
**Milk powder imports are therefore very likely to increase in the region** but, seeing as the EU's powder exports are currently difficult to predict (changes in export projections, possibility to stock and release powder to the markets), the growth rate remains unsure and, obviously, conditional to the demand in other markets where the demand is growing.



**Figure 6:** EU28 whole milk powder exports by destination, major importers 2012-2015

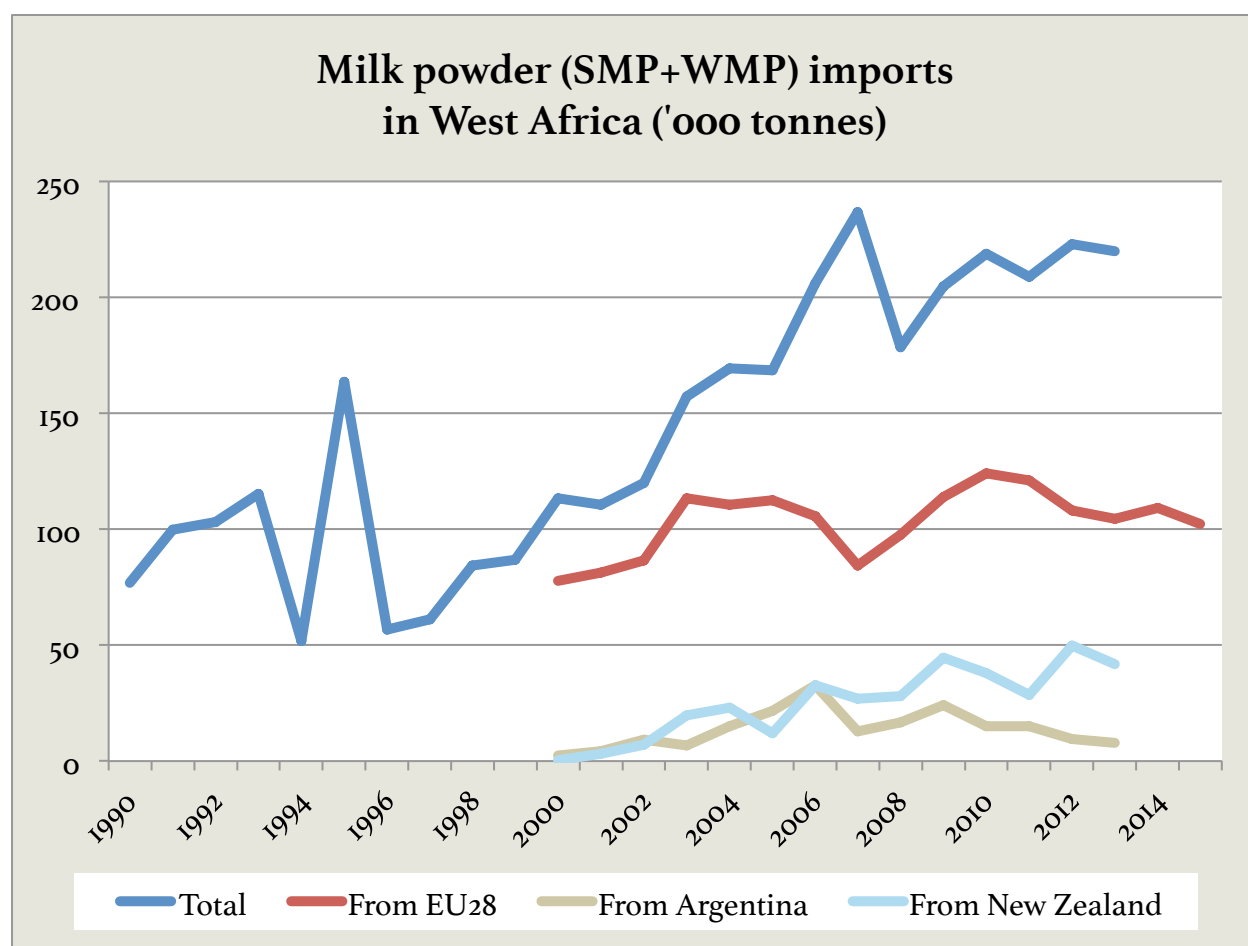
**Source:** Eurostat (2016)

**NB.** Regions classified according to the categories of the United Nations Statistics Division



**Figure 7:** Milk powder imports (SMP+WMP) by country of origin, major importer countries in West Africa

**Source:** FAOSTAT (2016)



**Figure 8:** Milk powder imports in West Africa, 1990-2013

**Source:** Eurostat (2016), FAOSTAT (2016), OECD Database (2016)

**NB.** A considerable part originates from tax havens and Middle Eastern countries that are originally supplied by the big exporter states. For example in 2008, more than 15 % of the total milk powder imports in West Africa came through these countries (FAOSTAT, 2016).

### European investments in the West African dairy sector

Increasing imports are not the only phenomenon at West African markets. In order to expand their global reach, the largest European dairies seem to make more and more investments in emerging regions, West Africa included. Some major players have been present in West Africa for decades with both export activities and on-site production, the best example being Nestlé which has exported to West Africa since 1916 (EY, 2014). Another European market leader, FrieslandCampina, has marketed its flagship brand ‘Peak’ in Nigeria since the 1950s (Business Day, 2016). This goes to show that European presence in West African markets is nothing new. Still, several companies have recently made notable new investments in the region and some have explicitly placed Africa as their new focus area for the coming years. In 2013, the Irish dairy company Glanbia expected an increase of 30-40 % in West African sales over the following five

years (The Marketsquare, 2013). A year later, Danone stated it would concentrate its future acquisitions in sub-Saharan Africa (Maury & Teisserenc, 2014). The Danish cooperative Arla Foods has launched three joint ventures in West Africa in 2013-2016 and has an objective to triple its sales in sub-Saharan Africa within the next three years (O’Keefe, 2015). FrieslandCampina has chosen “helping small farmers in Asia and Africa” as one of their four Corporate Social Responsibility missions (FrieslandCampina, 2015). Overall, 14 new acquisitions and trade deals in Africa were recorded by Rabobank in 2015, compared to only three in 2014 (Rabobank, 2016a). This highlights the growing importance of the continent as a market in the eyes of powerful European dairy companies, although the investments are not solely limited to West Africa.

Table 2 outlines the recent investments made by European market leaders, illustrated in Map 1. Of the seven companies mentioned, five are in the top seven of global dairy companies, with only Dairy Farmers of America and Fonterra (New Zealand) making the list from countries outside Europe (Rabobank, 2016a). European companies are therefore in a powerful position, implying that any changes in the EU milk policies could have significant knock-on effects outside the common market. The large variety of investments (see Annex 1) will obviously have different impacts in the trading partner countries. Joint ventures, for example can consolidate local industries and trigger product innovation, whilst in some cases the local partner is only responsible for mechanical packaging and distribution. Although some companies do collect local milk, the level remains marginal and, by and large, **these companies’ presence in the markets ensures a continuous flow of milk powder to the local industries and consumers, creating little or no connection with local producers.**

Company (country)	Presence in West Africa	Recent expansion in West Africa
Arla (DK)	Affiliates Arla Dairy Products in Nigeria and Arla Senegal SA, repacking facility with Mata Holding in Ivory Coast. Exports milk powder (Dano).	<b>2013:</b> Joint venture with Mata Holding in Ivory Coast to open a repacking facility for imported milk powder. <b>2015:</b> Joint venture (TG Arla Dairy Products LFTZ Enterprise) with a distributing company Tolaram Group in Nigeria for packaging and distributing imported products.

		<p><b>2015:</b> Joint venture (Arla Senegal SA) with a distributing company Attieh Group in Senegal for packaging and distributing imported products.</p> <p><b>2016:</b> Memorandum of Understanding with the government of Nigeria to develop the local dairy sector</p> <p><b>(2016:</b> Expected expansion in Mali)</p>
Danone (FR)	<p>Fan Milk International has factories in Ghana, Ivory Coast, Nigeria and Togo. Laiterie du Berger operating in Senegal.</p> <p>Exports consumer-ready products and powder for reconditioning. 5 % of turnover from Africa (1.2 billion EUR)</p>	<p><b>2005:</b> Starts funding a Senegalese dairy Laiterie du Berger</p> <p><b>2013:</b> Acquisition of 49 % of Fank Milk International, a market leader in frozen dairy products and juices in West Africa.</p> <p><b>2016:</b> 51 % share of Fan Milk International</p> <p><b>Other emerging markets:</b> Acquisition of 40 % Brookside Dairies, a market leader in dairy products in Kenya (2014). Acquisition of a yoghurt plant in Algeria (2015), Halayeb in Egypt (2016), and increased its stake in Centrale Danone in Morocco (2015).</p>
FrieslandCampina (NL)	<p>Affiliate FrieslandCampina WAMCO founded in Nigeria in 1973. Affiliates (WAMCO and Olam) have their own factories in Ivory Coast and Nigeria. Exports consumer-ready products and powder. 12 % of turnover from Africa and Middle East.</p>	<p><b>2010:</b> Use of local fresh milk in West African processing plants started.</p> <p><b>2014:</b> Acquisition of dairy business of Olam International in Ivory Coast.</p> <p><b>2014-2016:</b> Several Memoranda of Understanding with local governmental partners in Nigeria to support local milk sector.</p>

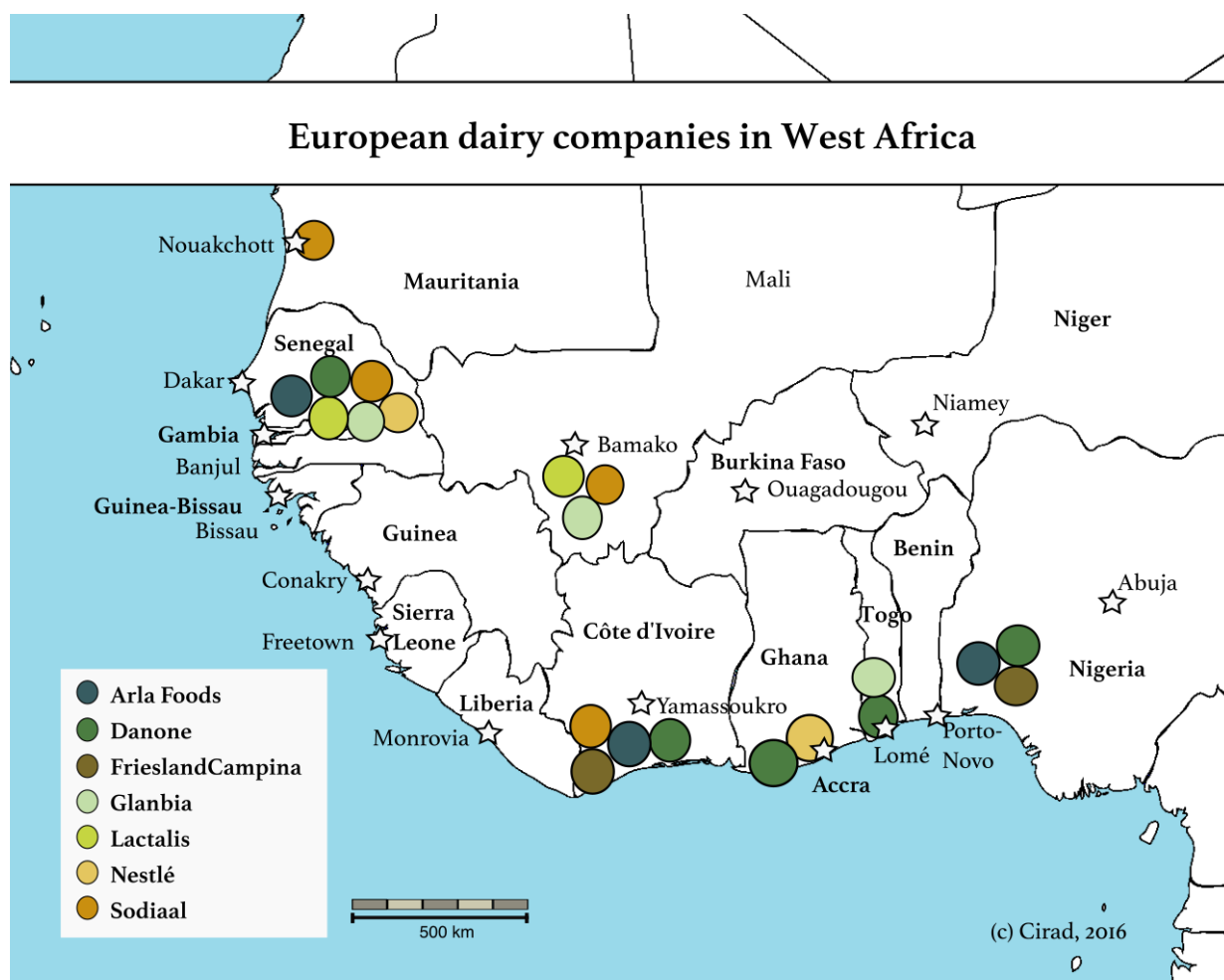


		<b>Other emerging markets:</b> Acquisition of 51 % of Engro Foods in Pakistan (2016), joint venture Friesland Huishan Dairy in China (2015).
Glanbia (IR)	No own factories in West Africa. Satrec in Senegal and Sicoma in Mali and Togo recondition Glanbia's powder. Exports especially fat-filled milk powder (Vitalait).	<b>2003:</b> Joint venture with Nigerian PZ Cussons. <b>2013:</b> A new processing plant in Ireland, focusing on export markets in the Middle East, Africa, Central America and Asia <b>2015:</b> PZ Cussons bought Glanbia's share of the joint venture but Glanbia will continue to supply the joint venture with dairy products.
Lactalis (FR)	Present in Africa since the 1980s. No factories in West Africa. La laiterie dakaroise and Meroueh in Senegal and Cotim in Mali market their powder products under Celia's brand Laicran. Exports consumer-ready products (Bridel, Président) and powder (Laicran).	<b>2007:</b> Acquisition of Celia, a French dairy, who had already markets in Mali and Senegal.  <b>Other emerging markets:</b> Nine new acquisitions in 2015 in other continents (e.g. Brazil, India, Turkey).
Nestlé (CH)	Production plants in Africa since 1927. Factories in Ghana and Senegal, two in Ivory Coast and Nigeria. Exports ready consumer goods and powder.	<b>2014:</b> New “modular” factory type developed for dairy products, which allows for expanding to new African countries with lower upfront costs. First are likely to be located in East Africa but can spread to other regions. <b>2014:</b> New factory line in Ghana for milk powder and other products.

		<b>Other emerging markets:</b> Investments (2012-2015) e.g. in Algeria, DR Congo and Morocco.
Sodiaal (FR)	No own factories in West Africa. Exports milk powder. Eurolait in Ivory Coast and Mali, Siagro-Kirène in Senegal and Tiviski in Mauritania have a licence to market their powder products under Sodiaal's brand Candia since the 1990s. Eurolait also holds a license for Yoplait yoghurt brand. 10 % of turnover from exports to Africa, Asia, Middle East and North America.	<b>2015-2020:</b> Investment plan to reach 23 countries with Candia licensing contracts.  <b>Other emerging markets:</b> Launching of production line and internet marketing in China (2015)

**Table 2** Investments of the dominating European dairies at West African markets

**Sources:** Investments – reference list (in References)



**Map 1:** European dairy companies in West Africa

**Source:** Investments – reference list (in References)

**NB.** The map illustrates only joint ventures, local factories and licencing contracts with local processors made by the seven biggest European dairy companies present in the region. Most companies and their affiliates sell their products in a wider range of countries than those marked.

### What is the role of the quota abolition?

The critical question is: to what extent the abolition of milk quotas has encouraged, and will encourage outreach to West African markets? Clearly, many companies which have made new investments operate in the same EU countries that benefit most from lifting production ceilings, implying that the quota abolition has a role in the equation. However, its influence should not be overstated. Many companies, such as Nestlé and Lactalis, held a grip on the markets long before the decision to lift the quotas and no significant investments have been noted recently. Nestlé also sources from Swiss producers, who, by default, are excluded from EU policies.

Regarding export levels, European exports to West Africa have, despite some fluctuation, had an upward trend for decades (Figure 8). It can be said with certainty that **the quota abolition will enable European dairies to increase their share in West African markets in the future but, above all, it will amplify an already existing tendency of growing exports and market outreach.**

Lastly, although all these actors operate under the same EU regulation, the EU should not be presented as one production and trading unit. It is composed of extremely variable member states and of multiple dairies and export traders in each country and, in the end, most member states are not directly involved in the changes the quota abolition will generate.

## Part 2 – What do we expect to happen?

The impacts analysed here depart from the premise that the quota abolition will increase milk powder exports from the EU to West Africa. As described above, the local dairy sector is already dependent on imports to a large extent, and the conditions are difficult for local milk producers and processors due to agricultural policies, access to markets (development programs with limited results, low share of milk collected by dairies), and environmental barriers. The question remains, would rising imports deteriorate these conditions even more?

### **Impacts on local milk production**

Overall, subsistence production dominates the dairy sector in West Africa especially among pastoralist producers, who contribute the most to the regional production, though household consumption is often supplemented by extra-household sales. As mentioned above, the primary goal of animal production is rarely selling milk. Revenues from milk sales are often of secondary importance for the household, although in some conditions they can represent up to 80 % of total revenues (Duteurtre, 2009). Considering the myriad of reasons pastoralists have for their activities, **rising milk powder imports are not likely to decrease their motivations to continue keeping livestock or to undermine the production conditions directly**. However, if the imports lead to a continuous neglecting of local milk production in agricultural and trade policies, negative consequences may arise in the long term (see below).

### **Impacts on local dairy prices**

Even if the production levels remained consistent, there are concerns of intensifying competition when there are more powder-based products in the markets relative to local fresh milk products (Curtis, 2011; Fritz, 2011). This follows the logics of supply and demand where the price of powder would decline, consequently increasing its demand.

In general, it is problematic to establish average prices for raw milk or powder, as the prices vary tremendously according to location due to distance from the production site, transport costs, market types (direct sales, markets, boutiques, supermarkets), processing and packaging, and seasonality. However in many cases powder is considered cheaper: for example a price comparison in Dakar showed that milk powder price per litre of reconstituted milk ranged from 390 to 455 CFA, whereas local fresh milk was sold at 500-700 CFA/litre when bought directly at the farm (Dia, 2013). Yet, in another comparison in Mali, local milk cost only 200-300 CFA/litre during the peak season, while the price for reconstituted milk was 490 CFA/litre (Corniaux,

2013). These numbers are far from representative but underline the variety of prices in the local markets.

Despite these factors, no remarkable price drops are foreseeable for milk powder. Firstly, it must be noted that despite the plunge in the world dairy prices in 2015, the long-term trend is slightly upwards (Rabobank, 2016b). Secondly, global milk powder prices have been volatile for a decade and even in 2012-2016, a period with no historical price peaks, they were fluctuating between 1 500 and 5 000 USD/MT (GTD, 2016). The volatility can be advantageous for local milk, as soaring powder prices can occasionally render raw milk more competitive (e.g CFSI, SOS Faim, 2008). The relative price fluctuation between WMP and SMP is worth noting, however. **If SMP remains cheaper when WMP prices soar, the industries can opt for transforming SMP into fat-filled milk powder and continue supplying markets where high fat contents is preferred, such as West Africa. This option can further reduce the motivation to collect local milk.**

However, neither global price trends nor sudden fluctuations are directly transmitted to local markets (e.g. Pinaud & Corniaux, 2009). The impact depends for instance on the product (the level of processing) and on connections with the global markets. Naturally, the larger the share of other costs is in the price of the final product, such as transport, processing and other raw materials, the less the global price of powder matters. Thirdly, rural producers and fresh-milk processing dairies might still keep their prices on the ordinary levels even though powder product prices declined in urban areas, due to the weaker influence of global powder prices at rural markets and, in some cases, the lack of market information, necessary for strategic pricing decisions.

In summary, **increasing imports will not necessarily push powder prices down** and even if this happened, the following chapter shows that this does not necessarily decrease the demand of local milk products.

### **Impacts on the demand of local raw milk**

Declining demand of local dairy products would probably increase the share of milk consumed within the producer household, resulting in lower daily revenues for local dairy producers. This decline in demand can occur on two levels: amongst consumers and amongst dairy processing facilities when choosing their raw material.

The question on consumer demand is important especially in urban areas that are likely to be more influenced by the increasing imports. Currently, local milk is available and used also in

urban areas despite the scarce supply, at least seasonally<sup>9</sup>, but the demand could weaken due to changing consumption preferences. Due to growing urban demand for milk products, local producers are struggling to meet demands. As such, **future urban generations will become more and more exposed to powder products. This might further alienate them from local fresh milk, possibly weakening its demand in the long term.** A change in consumer tastes has already happened, as before the 1960s, milk powder and processed powder products were practically non-existent in West Africa but are today appreciated and sometimes preferred to local products (see below). Increasing imports would therefore reinforce the ongoing trend.

At the level of dairy processing, those using both fresh and dried milk (many small-scale dairies and eight industrial dairies in Table 1) might change the raw milk-powder ratio, i.e. increase the share of powder, whereas those industrial dairies using only milk powder could be discouraged to even consider collecting local milk. The sourcing decisions of small-scale dairies have a minor local impact, as Broutin et al. (2015) estimate the number of families selling to small-scale dairies is 10 000 in the four countries where these dairies have emerged<sup>10</sup>. In contrast, some sixty industrial dairies of the region that currently use only powder can each process at least 10 000 litres of milk products per day. If a part of the powder they use was replaced by local milk, it would have an effect on a wider scale. On the contrary, if they choose to continue their current sourcing strategy, this appears as a great opportunity missed for boosting the local milk sector.

#### *Segmented markets but partial substitutability*

The available literature emphasizes that the markets of fresh local products and imported goods are segmented. Fresh milk allows for preparing various traditional, fatty products, which have a distinguishable taste and texture. Milk powder, then again, is for mass consumption, to be used for cooking and preparing beverages at home. Having completely different qualities, they are not used for the same purposes and furthermore, are not necessarily sold at the same markets, powder dominating in the urban and fresh products in the rural areas. **If this separation holds, local fresh products cannot be substituted with powder products and vice versa, implying that these products groups are not in competition with one another and increasing imports would not harm the local sector.** (Broutin et al., 2015; Corniaux et al., 2012b; Duteurtre et al., 2005; Duteurtre, 2007)

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<sup>9</sup> In Bamako (Mali), Dakar (Senegal) and Bobo-Dioulasso (Burkina Faso), local fresh milk is estimated to provide only 4-12 % of the consumed dairy products but some smaller West African cities attain coverage of up to 55 %. In a survey in five major cities in Mali, Niger and Senegal, 24 %, 54 % and 32 % (respectively) of liquid milk consumers bought local fresh milk occasionally or regularly. (Bastard et al., 2014; Corniaux et al., 2007a)

<sup>10</sup> Burkina Faso, Mali, Niger, Senegal



Yet, the fact that many small-scale and industrial dairies are already using both products as raw materials implies that they are at least partly substitutes on a dairy level. Among consumers, the substitutability depends on the product. Table 3 is a simplified classification of different dairy products made traditionally from local milk with equivalents of powder-based products processed in dairies. The comparison shows that not all traditional products can be replaced, as the literature suggests, and in the same vein, there are industrial products, such as ice cream made of milk powder, that are not typically made of local milk. Yet, competition may occur in liquid milk, *lait caillé* and yoghurt, since all three product types have equivalents reconstituted from milk powder. It is worth noting that these are also the most commonly consumed dairy products in Burkina Faso, Mali, Niger and Senegal (Bastard et al., 2014; Hamadou, 2007). **Evidently, the risk of increasing competition should not be ignored despite the segmentation.**

FRESH PRODUCTS	POWDER PRODUCTS	RECONSTITUTING FROM POWDER AT HOME <sup>11</sup>
Fresh milk (raw, boiled, pasteurized)	Reconstituted milk	Yes
Lait caillé	Reconstituted <i>lait caillé</i>	Yes
Yoghurt	Reconstituted yoghurt	No
- (no equivalent)	Evaporated reconstituted milk	No
Cream	-	No
- (no equivalent)	Reconstituted crème fraîche	No
Butter	-	No
Clarified or liquid butter	-	No
Soft cheese	Reconstituted cream cheese	No
Hard cheese	-	No
- (no equivalent)	Reconstituted ice cream	No

**Table 3:** Comparison of local fresh vs. milk powder products

**Sources:** Broutin et al., 2007; Corniaux & Duteurtre, 2013

<sup>11</sup> Milk powder sold to households in bulk must be taken into account. In the survey by Bastard et al. (2014), milk powder was the most often used for preparing liquid milk at home (76 % of respondents) and in Niger and Senegal, around a fifth of respondents buys milk powder to prepare *lait caillé*.

### *The role of consumption criteria*

When market segmentation does not hold and fresh and powdered products enter into competition, the demand of local milk depends ultimately on the purchasing criteria of the potential consumers and dairies.

In monetary terms, local milk is often (though not always, see above), deemed less competitive, as its price can be up to double that of milk powder. However, even in poverty-stricken countries, consumer choices are not solely based on prices. Four other key criteria that arise in consumer surveys are taste, dietary habits, hygiene and availability. (Broutin et al., 2005; Corniaux et al., 2005; Hamadou et al., 2007; Sow Dia et al., 2007) A remarkable 42 % of respondents in surveys made in Senegal raised “suspicious quality” as a reason not to buy local milk. As to milk powder, the same survey highlights that both in Mali, Niger and Senegal, it is consumed because of its nutritive qualities and less than 6 % names its price as a reason for purchase. (Bastard et al., 2014)

Against this backdrop, it seems that **opting for milk powder is not the last resort for the West African consumers** but instead, it is a demanded consumer good with certain quality attributes that fresh milk cannot replicate. Even if they were cheaper, **local milk products could not fit all consumers’ taste and other preferences. On the other hand, some consumers consider the local origin of milk an important purchasing criterion** (Bastard et al., 2014; Pocard-Chapuis et al., 2007), implying that not all consumers would prefer milk powder.

Estimates of the future demand in dairy processing facilities must consider the same criteria, encompassing characteristics beyond the price of raw materials. For some dairies, supporting local producers may be part of the core ideology of the business. In other cases, assuring a certain quality makes processors opt for local milk. (See e.g. Corniaux et al., 2012b.; Ferrari, forthcoming) The sourcing criteria of dairies have not, however, been widely documented and all in all, the substitutability of products remains insufficiently researched. As such, there is a need for more data to make more precise projections of the future demand.

### **Impacts on agricultural and trade policies**

Increasing imports allow for markets to respond to the growing demand of dairy products. Nevertheless, this may lead the governments in West African to consider that milk powder supply is sufficient to keep consumers satisfied. Consequently, they may lose incentive to support the fresh milk sector. For example, Arla Foods recognizes that their involvement in Nigerian and Senegalese markets with only milk powder “might contribute to further lessening the government’s incentive to invest in the sector” (Arla Foods, 2015). In practise, the governments

might be contented with liberal trade policies that let the powder flow easily to the domestic markets, without establishing agricultural policies and development programs to nourish local raw milk production and processing. Seeing the stagnation of local production for the past decades, it seems evident that development programs are necessary, and bypassing them can lead to long-term negative consequences for the fresh milk sector.

In the best of cases, milk powder imports **could give impetus to new policies**. Recently, Nigeria has shown determination to improve its local supply chain by calling for FrieslandCampina to collect local milk and recently Arla Foods to invest in the development of the sector instead of merely importing powder. The motivation for the Nigerian government is likely to derive from various sources such as falling petrol prices, but this shows that **rising imports will not automatically discourage public investments in the local sector**. It must be noted that many investments require external support, and European companies appear as attractive partners (see Part 3).

### **Impacts on women**

A separate group worth noting is women producers and processors. In West Africa, women have traditionally had a central role in production, often controlling part or sometimes all of the revenues resulting from milk sales. For example, in surveys in Kaolack and Fatick, Senegal, women were in charge of livestock in 68 % of households and in Kolda, milking, processing and selling were exclusively women's tasks. In Niger, 90 % of artisanal processing is estimated to be done by women. (Corniaux et al., 2005; Dia et al., 2007; Diao et al., 2002; Sow Dia et al., 2007) Yet, increasing formalization of milk sales has in some cases led to what Schneider et al. (2007) call "defeminisation", meaning more male control over milk production and revenues. With the emergence of small dairies, some producers have started selling their produce to these new processing units, leaving artisanal milk processors, women, with less or no milk to process and sell. Surveys in Bamako showed 70 % of producers had stopped selling milk to local saleswomen after the establishment of small dairies. As for producers, nearly three quarters of surveyed female producers near Bamako declared they have no more rights over milk sales after their husbands took over the milk selling activity and started supplying new small dairies. (Fokou et al., 2011) **Considering the vulnerability of women during the recent evolutions of the sector, it seems the possible deterioration of local production and processing conditions would hurt women particularly hard.**

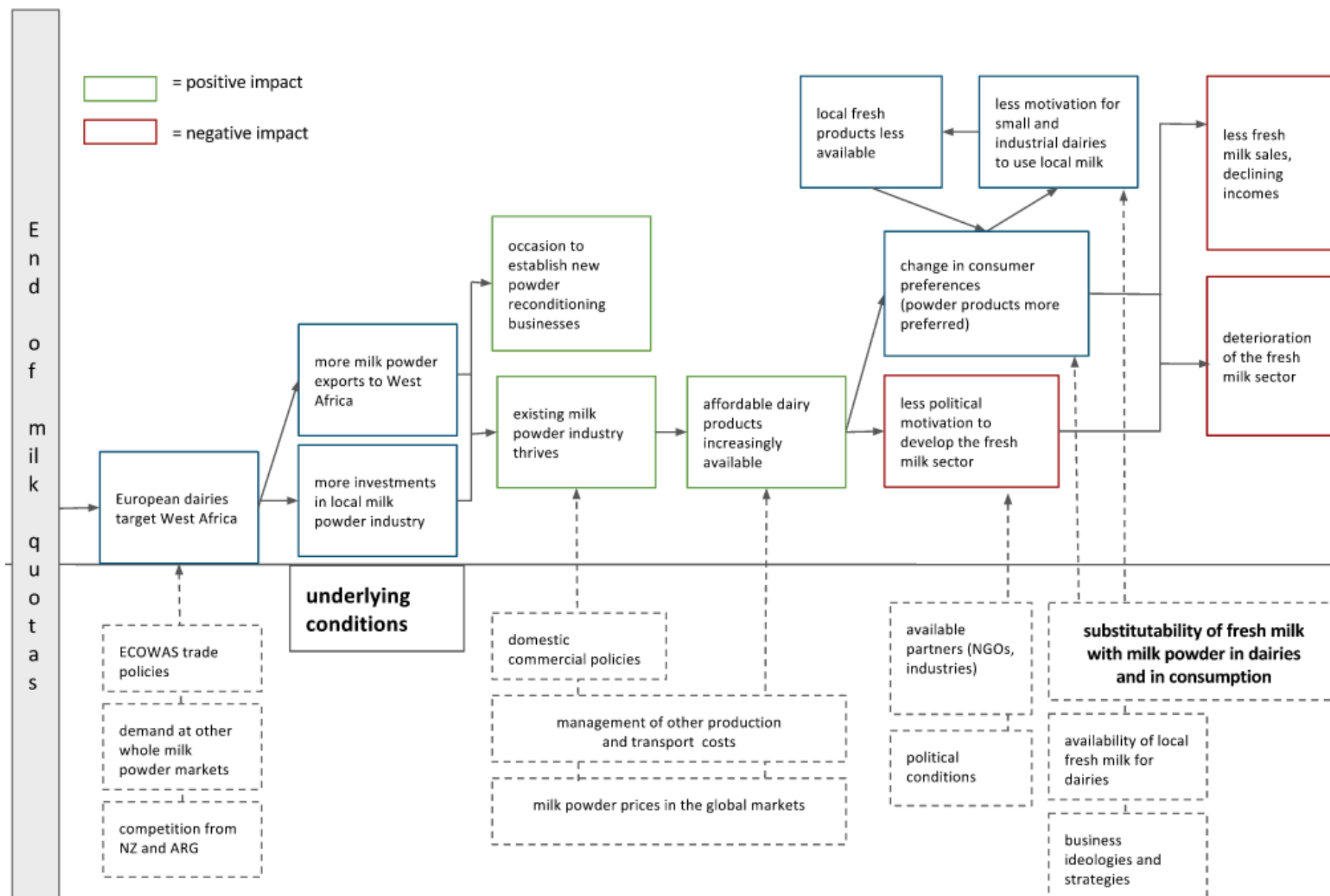
However, women should by no means be treated as passive victims but rather they have proved to be capable of adapting to new conditions and finding alternative income sources (e.g. Schneider et al., 2007). Nevertheless, women deserve special attention also in the future as the dairy sector continues evolving.

### **Impacts resumed: Winners and losers**

The analysis presented above shows that rising milk powder imports would not disrupt the West African dairy sector, as milk powder is already present and in urban areas even dominating the markets. However, they will create winners and losers among the producers, processors and consumers, as the industrial dairies and many consumers are likely to benefit from better availability of milk powder, whereas producers and artisanal processors, especially women, can be hurt in some conditions if the demand of raw milk declines. A more noteworthy consequence can occur on a political level, as the increasing imports may cripple the governmental motivation to develop the local sector, intensifying the structural import dependency and weakening local production conditions in the long term.

These impacts are illustrated in Figure 9, which **highlights in particular the uncertainty tied to all impacts**, as many of them are second or third order consequences. This is the case for the impacts at the far right side. Uncertainty is also seen in the numerous underlying conditions that determine whether each consequence would come about. Interestingly, it seems that **even though the initial impacts might be positive, they can result in secondary impacts with contrary long-lasting negative effects** (far right end). In the end, the uncertainties imply that there are ways to influence how the sector will evolve in the future. It is therefore important to prepare for increasing import levels and find ways to mitigate the possible negative impacts, discussed in the next part.

## The end of EU milk quotas – Implications in West Africa



**Figure 9:** Dynamics of the possible positive and negative impacts (Source: Author)

## Part 3 – Which road to take?

The West African milk sector is already in a paradoxical situation where local milk is widely produced but does not reach consumer pools, especially in urban areas. This discrepancy will intensify in the near future, calling for action both among private and public stakeholders. Although practical solutions are highly context-specific, the following chapter outlines political and industrial strategies that appear applicable in the region as a whole.

### What if imports were restricted?

The increasingly liberal trade policies of the ECOWAS have been criticized and rather higher trade barriers are sometimes promoted to curtail import dependency (e.g. Atelier sur le devenir de la filière lait local, 2016; Berthelot, 2016). Kenya is often used as a reference point, as the country is known for its success in developing local dairy production. Along with the structural adjustment programs sweeping the developing world in the 1980s and 1990s, Kenya witnessed a rapid liberalization of its dairy sector. Import tariffs were lowered, resulting in increase in dairy imports throughout the 1990s. In 2002, the Kenyan government responded by setting import tariffs up to 60 %, which left no question about the chosen political strategy: Kenya was to develop its own dairy production to escape dependency on imported products. This change enabled the Kenyan dairy industry to start in earnest, although imports are still a substantial part of the local dairy sector. (Fritz, 2011; Jensen & Keyser, 2010; Muriuki, 2011)

Despite the success of Kenya's policy change, this model cannot be directly applied to the West African context, since the natural conditions for dairy production are not comparable between Kenya and the Sahel. Cows in Kenya are estimated two to three times more productive than elsewhere in the continent, and the more favourable climate ensures there is sufficient animal feed and pasture available for decent production levels. (The World Bank, 2013)

Aggressive protection as in Kenya is not the only solution. A simulation study of three policy alternatives in Senegal illustrates that fostering local development is possible even with more moderate trade barriers, though this was only true in the simulation where raw milk collection centres were sufficiently subsidized (Diarra et al., 2013). All in all, **heavy taxation of milk powder imports is likely to hurt local processing industries and consumers, and therefore does not seem an appropriate policy alternative in West Africa**<sup>12</sup>.

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<sup>12</sup> Diarra et al. (2013) found that in order to motivate industrial dairies in the region of Ferlo to use local milk in the production of *lait caillé*, the sector taxation (tariffs and VAT) should attain at least 133 %. This policy simulation hit domestic consumers extremely hard, decreasing consumption around 25 % compared to the reference situation of no taxation. On the contrary, when the investments of milk collection centres were subsidized by 90 %, a taxation rate of 15 %

Nevertheless, **it is of vital importance to maintain protection over ready consumer goods**. Liquid milk and yoghurt bring hardly any added value to local economies, contrary to processing the milk powder on site. For example, UHT (Ultra-High Temperature) milk is often imported, but local UHT processing is increasing and seems to have the potential to compete with the imported milk (Broutin et al., 2007). By imposing import barriers on the processed product but not on the raw material, local industry could be positively impacted.

### **Could local raw milk gain more ground?**

Seeing the volumes of raw milk already produced, the logical way to reinforce the local sector would be to collect more of this milk for dairy processing, instead of leaving it to informal markets. For governments, increasing collection is of interest for the wide socio-economic benefits it can offer, especially in the Sahelian zones where the environment is less appropriate for other economic activities. For dairies, collecting more local milk is economically interesting, firstly because the demand for local fresh milk clearly exists; secondly, processing local milk is an occasion to produce niche products that can be sold at higher prices; thirdly, engaging in the development of local milk chain can bring reputational benefits, eventually translating into economic gains. This might be the reason behind the commitment of some European dairies, namely Danone and FrieslandCampina and soon Arla Foods, to search for ways to support the local sector. Lastly, local milk can balance the uncertainties tied to global milk powder prices in those dairies that are more directly touched by global price fluctuation.

Despite the possible gains, it must be noted that there are good reasons why the current industry is relying on milk powder. The available research rejects outright the visions of a future without powder, as replacing it with local milk would require radical, profound changes in the production systems and commercial circuits (e.g. Corniaux, 2015, Corniaux et al., 2012a). The quantities of raw milk delivered can range immensely according to the season and conditions, which poses substantial barriers for industries to invest in fresh milk processing lines. Another major hindrance is long distances between producers and dairies. Expanding the radius of collection can deteriorate the quality of the milk when cold chains are not secured and may increase transport costs above reasonable limits. Also unstable or low milk quality and high costs of animal feed are often mentioned as obstacles. (e.g. Arla Foods, 2015; Corniaux, 2015) On the producers' side, increasing production is likely to require importing animal feed, which is paradoxical when the aim is to decrease dairy import dependency.

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was enough to substitute milk powder with local fresh milk. In this situation, consumption decreased only up to 5 % compared to no taxation, whereas collecting local milk increased by 17 % and farm revenues rose by 29 % in small-scale farms.



In spite of these challenges, the local industrial dairies engaging in fresh milk processing – Eurolait, Kirène, Laiterie du Berger, Mali-Lait, NigerLait, Solani and Tiviski – show that **local milk can be collected also for large-scale processing**. Furthermore, in the policy simulations made in Senegal (Diarra et al., 2013), the cost of animal feed imports required for increased milk collection attained only 10 % of the previous value of milk powder imports. This implies that substituting a part of the imported powder with local milk can make economic sense also on a national scale.

### **“Inclusive” industrial strategies**

Although an absolute rejection of milk powder is not possible, there is a long continuum between complete import dependency and self-sufficiency with a wide range of options to explore in-between.

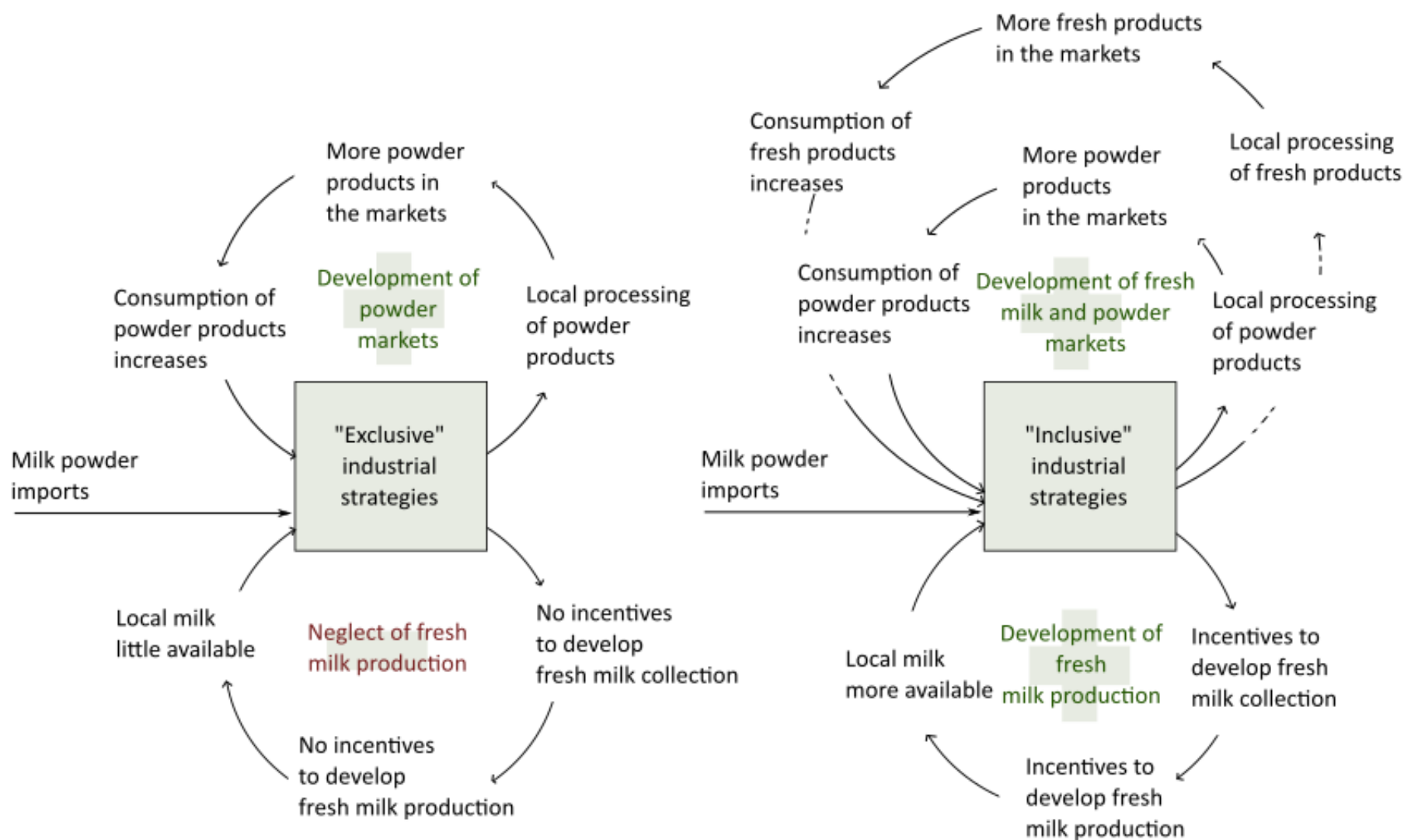
Already now, the European dairies and their local partners apply a diverse set of industrial strategies (Annex 1). Two dominant approaches are exporting powder to West African distributors or exporting powder to local processors who then manufacture liquid milk, yoghurts and other products on site. These could be named “exclusive” strategies, as they concentrate exclusively on powder and leave local milk aside. The left side of Figure 10 illustrates this strategy and the following impacts: investing in the powder sector does have positive effects for one part of the sector but it may create long-lasting negative consequences among the producers.

Recent research (e.g. Corniaux, 2015; Broutin et al., 2015) is promoting another path that would take local collection into the equation, presented on the right in Figure 10. **As the local sector cannot sustain without milk powder imports, they would still be a part of the solution and continue benefiting some consumers and processors but besides this, collecting local milk would ensure the development of the sector in its entirety.** From the European point of view, this could be done by setting up an affiliate or by investing in local dairies that would then process local milk. One example of this is FrieslandCampina’s affiliate WAMCO in Nigeria. Alternatively, companies can support local collection centres, dairies or producers like Danone is doing with Laiterie du Berger in Senegal. These “inclusive” strategies can eventually create virtuous circles where investments in assisting weaker links come back as benefits for other stakeholders.

### **What do inclusive strategies require?**

On a policy level, the basis for inclusive strategies is, on one hand, low import barriers on milk powder for industrial use and on the other hand, sufficient investments and development programs to support the local milk sector. This is where the interest of powerful European dairies in the West African markets appears promising. They could provide the urgently needed capital that can be funnelled to where it is the most needed, while enjoining the gains raw milk processing likely generates for their own activity. Both industrial processors and producers must also be ready to change current practices. For example producers might need to intensify their production and rely less on pastoralism, whereas dairies may have to start paying producers partly in agricultural inputs to diminish seasonal fluctuation in milk supply. Obviously, when designing new raw milk collection networks, producers must be included in the process, as the success of these efforts depends largely on producers' behaviour and the rights they are given in these networks.

In the end, one must remember that the endeavours to collect local milk do not automatically benefit the poorest households (Corniaux et al., 2007b). Participating in trainings or taking credit to improve farming practices, perhaps necessary to have the milk sold to dairies, might not be attractive for producers having only few animals or means of subsistence, or residing in peripheries far from the collection networks. Creating new markets for some producers can even deteriorate the conditions for others, thereby increasing inequality between producers, which has been the case for example for some women. Therefore, specific measures to support disadvantaged farmers are needed if developing the dairy sector is also expected to eradicate poverty and inequality.



**Figure 10:** Exclusive and inclusive industrial strategies (Source: Author)

## Conclusions

The ending of the EU milk production quotas will very likely trigger increasing milk powder imports in West Africa. This is a result of the remarkable rise in whole milk powder exports projected in the EU and the pronounced interest of several European dairies in penetrating the West African markets, encouraged by significant demographic growth and simultaneous stagnation of the domestic dairy production in the region. However, many dairies have been investing in West Africa for decades and milk powder imports already represent large shares of the market. This policy change could tighten the European grip on these markets but in the end, will not profoundly change the direction the sector has already been moving in. Rather, it is accelerating the decades-old situation of structural import dependency.

The milk powder channelled to West Africa can still generate a host of impacts ranging from positive to damaging, however all remaining uncertain and conditional to a wide range of underlying factors. The dairies investing in milk powder production and consumers who prefer powder products are likely to benefit. The relative abundance of milk powder can however decrease the demand of local milk among consumers and dairy processing units, which would diminish the producers' revenues and possibly hurt women in particular. This phenomenon is likely to be provoked by urbanization as new urban generations become accustomed to powder products and drive demand for them. More importantly, increasing imports can engender long-term negative consequences by discouraging the governments to develop the raw milk sector, influencing the future production conditions for producers.

Yet, these impacts must be taken with caution. The decline in local milk demand depends on the substitutability of the two different product groups – powder-based and local fresh products. These two value chains have been described as segregated, having no competition between each other. However, there are situations where they enter into competition, both as a raw material for dairy processing and as consumer goods. Still, the questions of substitutability have been insufficiently researched, leaving an important knowledge gap that needs to be filled in future research. Of particular importance is the case of fat-filled milk powder, as increasing imports of FFMP can diminish the motivation to collect local raw milk. Even the expected positive consequences are not guaranteed, as they depend on the price of milk powder and the resulting products, which are influenced by the world prices, domestic price policies, processing costs and other variables.

The overriding message is that the described impacts are far from automatic and the decisions made by key actors can shape the destiny of the local dairy sector. National-level self-sufficiency is by no means possible in West Africa and the future strategies must rely both on imported milk powder and local milk collection. This “inclusive” strategy would generate winners among

industries, consumers and producers, whereas an “exclusive” strategy focusing solely on powder products would leave local milk producers outside the development dynamics. While developing an inclusive strategy is admittedly challenging, at least eight industrial dairies are collecting local milk already, demonstrating that it is indeed possible to implement this strategy at a larger scale.

Increasing the local milk collection requires prominent investments, implying that the European dairies active in the region have a role to play. They possess the capital that could be funnelled to promoting local milk collection, which would bring economic gains for the dairies themselves. Furthermore, they might have political leverage that can influence governments, encouraging them to develop the local sector together with the industries. In addition to outside investors, responsibility lies also on local industrial dairies that currently rely primarily on milk powder. Lastly, government action is imperative in order to form agricultural and trade policies that allow for implementing inclusive strategies, and to ensure these endeavours can be combined to poverty eradication and a fight against inequality.

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## **Annex 1**

### **Investment strategies of European dairies in the West African dairy markets**

The European dairies have all chosen different strategies for their market expansion. Danone decided to jump into a new business area by acquiring Fan Milk International, whose ice creams sold from small trolleys have already conquered the streets in six West African countries. Danone's General Director in Africa, Pierre-André T  r  sse, notes their strong side is in fresh dairy products but in the absence of developed cold chains, it was preferable to find a new entry point to the markets (Douet, 2015). Fan Milk International is said to use only milk powder in their yoghurts and aromatized milk drinks (Maury, 2014) and, so far, there are no publicly made objectives for altering the import-based model. At the same time, however, Danone is supporting Laiterie du Berger, a Senegalese dairy that is often referred to as the archetype of a successful business that simultaneously is developing the local milk sector. Laiterie du Berger is buying milk from some 800 local producers, which is exceptional for West African dairies that generally rely on imported milk powder (Danone, 2016). Other development initiatives are run by the development fund 'Danone Communities' (Maury & Teisserenc, 2014). There is, therefore, a dual strategy of grasping the markets by acquiring a powerful regional leader strongly based on milk powder, balanced by supporting Laiterie du Berger and local milk collection.

Arla Foods has joined local repackaging and distributing companies and concentrates on spreading milk powder products to the new markets, thus staying in a rather safe zone, at least to begin with. This strategy is also chosen by Glanbia and Lactalis who do not have facilities in West Africa but, contrary to Arla Foods, no joint ventures have been made in the region either. In late 2016, Arla Foods signed Memorandum of Understanding with the government of Nigeria to develop the local milk sector, which implies their business strategy in the region is still under development (Dairy Reporter, 2016).

A particular case is FrieslandCampina's Nigerian affiliate. FrieslandCampina WAMCO, which has an ambitious vision of increasing the share of local fresh milk used in its production to 50 % in the near future (CTA, 2014). The company is already claiming to base 10 % of its production on local fresh milk and it has signed several Memoranda of Understanding with different governmental partners in Nigeria. Import-based products are, however, still dominating. In Nigeria, there are no guarantees the 50 % goal could be achieved and the Ivorian partner Olam relies exclusively on powder (Olam, 2016).

Nestl   had made an attempt to provide its factory in Senegal with local milk in the 1990s. However, the amount of fresh milk processed was less than 10 % of the capacity of the plant and in 2003, the collection of local milk finally ceased. (Dieye et al., 2005) As of now, Nestl   has a

strong position in the markets through its six factories in four West African countries manufacturing a wide range of dairy products, and it has not announced new objectives to develop local milk collection.

Lastly, Sodiaal has sold licences to West African reconditioning entities for them to distribute local products under the European brand Candia and Yoplait, giving them some marketing leverage with European prestige while keeping the actual production near the consumers. Sodiaal has not, however, increased its West African market share recently but rather seeks for expansion elsewhere, especially in China (Agri49, 2015).

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